

BENCHMARKS

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NORTH TEXAS STATE UNIVERSITY

JULY 1986

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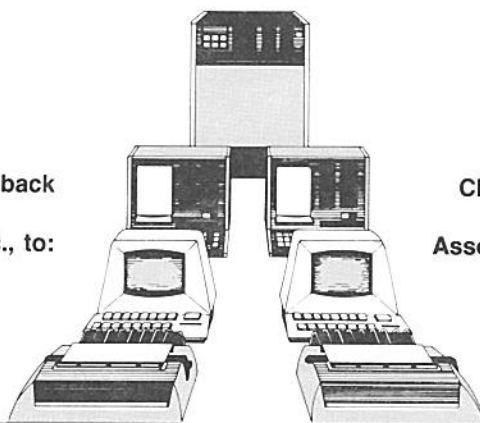
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BENCHMARKS Reader/User feedback is encouraged.

Send all letters, suggestions, etc., to:
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SERVICES AVAILABLE TO USERS OF THE NTSU COMPUTING FACILITIES

The NTSU Computing Center is located in the Information Sciences Bldg., Room 119. Telephone: (817) 565-2324. HELP DESK phone: 565-4050. Graphics Lab phone: 565-3479

BENCHMARKS QUESTIONS/CONTRIBUTIONS, ETC. - Claudia Lynch

INFORMATION & ID CODES; DISK SPACE PROBLEMS - Carolyn Goodman

PRE-RESEARCH COUNSELING; STATISTICAL/RESEARCH SUPPORT - George Morrow, Scott Barber, Claudia Lynch, Tim King, Panu Sittiwong

ACADEMIC ADABAS/COM-LETE; CRSP & COMPUSTAT PROBLEMS - Telka Clem

STUDENT PROGRAMMING PROBLEMS - CSCI Dept., GAB Room 542A; BCIS Dept., BA Room 152

JCL PROBLEMS; PASSWORD & OPERATING SYSTEM PROBLEMS; COMMUNICATION/TERMINAL PROBLEMS - Help Desk

DATA ENTRY & KEYPUNCH; TEST SCORING & ANALYSIS - Betty Grise

ADMINISTRATIVE APPLICATIONS - Coy Hoggard

PRINTOUT RETRIEVAL - RJE Operators

DIALING UP NTSU COMPUTERS OVER THE TELEPHONE

Phone numbers for the Local Area Network (LAN) are:

300 BAUD: (817) 565 - 3300

1200 BAUD: 565 - 3499

300 BAUD: D/FW METRO 429 - 6006

After a communications link has been successfully established, the user will receive the # prompt. At this point, it will be necessary to issue the appropriate CALL command to connect with a computer.

The numbers that will accept either 300 or 1200 baud communications (connected to modems with an autobaud feature) are currently out of order. Watch VAX News, MUSIC/SP News and *Benchmarks* for information concerning their availability.

CALL 8040 will connect with the NAS/8083 (for MUSIC/SP 8050 access)
8060

CALL 3270 will connect with the NAS/8083 through the 3270 3280 protocol converter

CALL DEC will connect with the VAX Cluster
CALL 780 will connect with the Research VAX

CALL 2000 will connect with the HP-2000

NTSU CABLE SYSTEM SCHEDULE

The current configuration of the NTSU cable system is as follows:
Channel 7 — NT Daily. Broadcast originates from the NTSU Journalism Department.

Channel 8 — Tager microwave channel. Carries broadcasts to and from NTSU to other links in the Tager network.

Channel 10 — NTSU Computer System Status Monitor (SSM). Displays the current status of the NAS, VAX and HP computer systems supported by the Computing Center.

Channel 12 — Sammons Cable. Currently broadcasts Cable News Network (CNN), unless a special program is requested.

Special broadcasts to and from classrooms (on channel 11), etcetera can be arranged by contacting the Media Library (565-2484).

HOURS FOR NTSU COMPUTER ACCESS AREAS*

SUMMER 1986:

<u>Days</u>	<u>Times</u>	<u>Location</u>
Sunday	2-10 p.m. Noon-Midnight 1-8 p.m.	ISB 110 Terminal Area Computing Center RJE GAB 550C
Saturday, Sunday	Noon-11:45 p.m. Noon-5 p.m.	College of Business Graphics Lab
Monday	7:00 a.m.-Midnight	Computing Center RJE
Tuesday-Saturday	7:00 a.m.-Open 24 hrs/day	Computing Center RJE
Monday-Thursday	7:30 a.m.-10 p.m. 8:15 a.m.-11:45 p.m. 8 a.m.-11 p.m. 8 a.m.-10 p.m.	ISB 110 Terminal Area College of Business GAB 550C Graphics Lab
Friday	7:30 a.m.-6 p.m. 8:15 a.m.-7:45 p.m. 8 a.m.-5 p.m. 8 a.m.-6 p.m.	ISB 110 Terminal Area College of Business GAB 550C Graphics Lab
Saturday	9 a.m.-6 p.m. CLOSE Midnight 11 a.m.-6 p.m.	ISB 110 Terminal Area Computing Center RJE GAB 550C

*Hours on finals days and between sessions may vary. Check MUSIC/VAX News and/or posted schedules for exceptions.

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 * NEW POLICIES,
 * PROCEDURES,
 * AND OTHER
 * IMPORTANT
 * STUFF
 *

It's User ID Renewal Time!!!

By Carolyn Goodman, Administrative Assistant for Computer Services (FA18@NTSMUSIC)

Academic User ID-Codes are assigned and valid for the period September 1 through August 31 of the following year. Therefore, all current User ID-Codes - ON ALL SYSTEMS - will be expiring August 31, 1986.

If you wish your ID-Code to be valid and active after September 1, 1986, it is necessary to complete the ID-Code Request Form "Renewal FY87." If you plan to be away part or most of the summer and wish to use your current ID-Code during the fall semester, you should *definitely* plan to complete this form before leaving campus for the summer. All ID-Codes will be deactivated September 1st, so renewing early will ensure that your account and all accumulated files contained within will remain active.

If you have any questions regarding ID-Code renewal procedures, please feel free to contact me at the Computing Center (565 - 2324, ISB 119).

Computing Center Summer II Short Courses

The Computing Center is offering the following short courses for the second summer session. Please pre-register to attend. Only 20 people will be admitted per section. Courses marked with an * require knowledge of the MUSIC Context Editor. THE COMPUTING CENTER RESERVES THE RIGHT TO CANCEL COURSES WITH LESS THAN 5 PEOPLE SIGNED UP.

1. Three separate 2-hour introductory sessions on the MUSIC/SP interactive operating system, using the 3270 Protocol Converter to do FULL-SCREEN EDITING ON MUSIC/SP. To be held in Room 110 of the Science Library (ISB).

Saturday, July 19	: 9-11 a.m.	Instructor: Janice Green
Wednesday, July 23	: 6-8 p.m.	Instructor: Telka Clem
Thursday, July 24	: 1-3 p.m.	Instructor: Tim King
2. A two-hour session on save Files in SAS and SPSS-X. To be held in the Graphics Lab (ISB):

Monday, July 21	: 9-11 a.m.	Instructor: Scott Barber
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3. A three-hour session on VAX Utilities & Commands. To be held in Room 110 of the Science Library (ISB).

Monday, July 21	: 6-9 p.m.	Instructor: Ron Brashear
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4. A two-hour introductory session on SAS.* To be held in Room 110 of the Science Library (ISB).

Monday, July 21	: 1-3 p.m.	Instructor: Tim King
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5. A two-hour session on using MUSIC/SP Utilities.* To be held in Room 110 of the Science Library (ISB).

Friday, July 25	: 9-11 a.m.	Instructor: Janice Green
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6. A two-hour introductory session on SPSS-X.* To be held in Room 110 of the Science Library (ISB).

Tuesday, June 17	: 1-3 p.m.	Instructor: Tim King
Wednesday, July 23	: 8-10 a.m.	Instructor: Panu Sittiwong
7. A two-hour introductory session on IBM JCL.* To be held in the Graphics Lab (ISB).

Thursday, June 19	: 3-5 p.m.	Instructor: George Morrow
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8. An introductory on using SAS/GRAPH. To be held in the Graphics Lab (ISB).

Wednesday, July 23	: 1-3 p.m.	Instructor: Mansur Hasib
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SAS Users Group 1987 Conference in Dallas

By Claudia Lynch, *Benchmarks* Editor (AS04@NTSMUSIC)

SUGI, the SAS Users Group, will hold its 12th annual international conference at the Loews Anatole Hotel in Dallas on February 8-11. There is currently a call for papers to be submitted in the following categories:

- * CPE, Systems Software, and Operating Systems
- * Data Base Systems
- * Econometrics, Operations Research, and Quality Control
- * Education and Consulting
- * Graphics
- * Information Systems
- * Microcomputers
- * Posters
- * Statistics
- * User Interface Tools

The deadline for submission of abstracts is September 1, 1986. For more information on SUGI '87 and/or the paper submissions contact me at the Computing Center (565-2324).

Note: If you want to keep up with the latest goings on at SAS Institute, you should probably become a subscriber to *SAS COMMUNICATIONS*. Address all inquiries to:

SAS Institute Mailing List
SAS Institute Inc.
Box 8000, SAS Circle
Cary, NC 27511-8000

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*      MICROCOMPUTERS      *
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MicroBits Column No Longer a Part of Benchmarks

The column "MicroBits: Micro News You Can Use," which was contributed to *Benchmarks* by the Microcomputer Maintenance Shop (MMS) is no longer a part of this newsletter. "MicroBits" was out of production for several months, but is back again as a newsletter available directly from the MMS. It was always available as a separate entity from the MMS, but that is now the only way to get a copy of what the folks there have to say. For more information, contact the Microcomputer Maintenance Shop GAB 527, Ext. 2387.

Software Review: Crosstalk XVI

By Dave Molta, Technical Support Communications Group (SY11@NTSMUSIC)

We are frequently confronted with questions concerning the selection of microcomputer communications software. This is the first of a series of articles reviewing communications software available for IBM PC and compatible micros. We will begin with a review of the most widely implemented communications package, Crosstalk XVI, along with a recently introduced "clone" of Crosstalk called Mirror. Future articles will cover other popular commercially available packages as well as several public domain or shareware packages which may be appropriate for your applications.

Product Description

Crosstalk XVI was one of the first full-featured communications software programs available for PC-DOS micros. As a result, it has established itself as somewhat of an industry standard for microcomputer communications. While most microcomputer software can generally be classified as either menu-driven (making it easier for inexperienced users) or command-driven (making it more efficient for experienced users), Crosstalk combines elements of both classifications. When the user starts the program, the Crosstalk logo will appear on the screen. Pressing <RETURN> brings up a command menu summarizing the major program parameters such as baud rate, number of data and stop bits, and terminal emulation. The bottom line on the screen, the command line, will issue a prompt for a command file to be selected by the user from a menu of choices. Command files are created by the users and contain information about the system you are trying to communicate with (i.e. VAXcluster, MUSIC, Compuserve). You can also select a SETUP file which will prompt you for needed parameters and allow you to save it in a Command file under a specific file name. The next time you run the program, this new command file will be listed on the menu of command file choices.

Once you have selected a command file, pressing `<RETURN>` will either begin dialing your modem if you have one, or place you in terminal mode if you are connected directly to the Local Area Network (LAN). While in terminal mode, the screen is blank except for the last line which presents you with the key to press to return to command mode and other information depending on what you are doing at the time (i.e. the name of a file you are downloading). Pressing the `<ESC>`ape key returns Crosstalk to command mode. Pressing `<HOME>` accomplishes the same thing, except the status screen will also appear. Since the `<ESC>`ape key is used at NTSU to return to the LAN, it is important to note that it is possible to set Crosstalk up to return to command mode when you press almost any key (e.g. `<CTRL> <W>`). Once in command mode, you can enter commands to, for example, transfer files, list directories, or receive on-line help, by entering the first two letters of the command.

Since Crosstalk is written in assembly language, the program is extremely fast with support for transmission speeds up to 9600 baud. It is also important to note that Crosstalk has undergone numerous revisions since its initial introduction resulting in a program which is free of major bugs.

Communications Parameters

The following communications parameters are supported by Crosstalk XVI.

- | | |
|-------------------------------|-------------------------|
| * Communications ports 1 or 2 | * Full or Half Duplex |
| * Baud rates from 110 to 9600 | * 7 or 8 data bits |
| * Even, odd, and no parity | * 1 or 2 stop bits |
| * Auto and Non-auto line feed | * XON/XOFF flow control |

Terminal Features

The following is a list of terminal features included in Crosstalk XVI Version 3.6.

- * DOS Directories can be viewed from within the program including size of files and transmission time at current baud rate. Subdirectories can be changed from within the program.
- * DOS text files can be listed on the screen.
- * DOS files can be erased from within the program
- * Function keys, including `<F1>` - `<F10>`, `<SHIFT> <F1>` - `<F10>`, `<CTRL> <F1>` - `<F10>`, and `<ALT> <F1>` - `<F10>` can be easily programmed.
- * All screen information can be simultaneously echoed to the printer.
- * Filter command allows for the discarding of any incoming characters (such as control characters) and stripping the high bit off graphics characters.
- * On-line timer keeps track of connection time.
- * Debug facility allows you to see ASCII, Hex, or Character representations of incoming control characters.
- * Autodial modems are fully supported including the capability to redial a busy number and sound an alarm when the call has been completed.
- * Screen colors can be changed on color monitors.
- * Other DOS programs, such as an editor or spreadsheet, can be run from within Crosstalk.

Terminal Emulation

Most full-featured PC communications programs are capable of emulating one or more popular video display terminals. Crosstalk can emulate the following terminals.

- | | |
|---------------------|-------------------------|
| * Televideo 910/920 | * IBM 3101 |
| * Adds Viewpoint | * Texas Instruments 940 |
| * DEC VT-52 | * DEC VT-100 |

Since it is among the most widely supported terminal types, most users prefer communications software that supports VT-100 emulation. This allows for the use of full-screen editing on MUSIC and COM-LETE when signing on through the protocol converter (i.e. CALL 3270). In addition, since the the VAXCluster is oriented towards VT-series terminals, VT-100 emulation is very important if you use the Cluster on a regular basis. Note that the following VT-100 features are not supported by Crosstalk:

- | | |
|--------------------------|--------------------------|
| * 132 column mode | * Smooth scrolling |
| * Split screen | * Double-high characters |
| * Double-wide characters | |

In addition, Crosstalk's VT-100 emulation has been known to act strangely at times. For example, interrupting an application using `<CTRL> <Y>` momentarily shifts Crosstalk into reverse-video, and on the TIPC version, may disable screen scrolling (interrupts using `<CTRL> <C>` work properly, however). Escaping to command mode and entering the clear screen command (CLS) returns the program to normal operation, but such an inconvenience is unexpected in a mature software product. In summary, while Crosstalk's terminal emulation features are adequate, this is probably one of the product's weaker features.

Data Transfer

Crosstalk includes several data transfer capabilities which allow you to take advantage of your micro's intelligence. The following features are available which allow you to capture (download) text files from a host system to your micro:

- * Capture data to memory
- * Capture data to a disk file including optional erasing of or appending to an existing file.
- * Retro-capture of two screens of data which has already scrolled off the screen.
- * Capture review to review captured data in memory
- * Capture search to search for captured data in memory
- * Capture of screen image to memory

The following features are available which allow you to transfer (upload) text files to a remote system:

- * Upload text file with delay between lines
- * Upload with prompt character between lines (Needed for uploading to MUSIC)

Crosstalk can also be set up to allow your micro to act like a host system. In answer mode, Crosstalk can be set up to prompt the user for a password and access to files can be restricted.

Protocol File Transfer

Crosstalk allows for protocol file transfers to and from your micro. Since protocol file transfers contain an error-checking algorithm, this feature allows the user to exchange binary program files with any system which supports the protocol. The latest version of Crosstalk (3.6) supports the following file transfer protocols:

- * XModem (Widely used among computer bulletin boards and information utilities such as Compuserve)
- * Kermit (Widely used in academic and mainframe environments)
- * Crosstalk Proprietary (Useful when transferring files between two Crosstalk systems)

Command and Script Files

Command files are DOS text files which contain configuration information for use with a specific host computer. For example, you could set up a configuration file for the VAXCluster which would contain information related to terminal emulation, the definition of function keys, baud rate, etc. Another configuration file could be set up for MUSIC in full-screen mode which, in addition to this information, defines the function keys as PF Keys. A third configuration file might be defined for MUSIC in line-edit mode containing information related to prompted upload. Configuration files can be created and saved from within Crosstalk and later edited using any ordinary text editor.

One of Crosstalk's most useful features is its built in programming language. These programs, called script files, allow you to automate your communications sessions. Using simple commands such as Do, If, Jump, and Wait, it is possible, for example, to automatically dial into a remote system, log on, download mail messages and program output, log off, and hang up the phone without entering any commands from the keyboard. Script files are particularly useful when accessing information utilities which charge a fee for connect time, especially for routine tasks such as reading electronic mail.

It should be noted that the logical operators in Crosstalk's Script files are quite limited. Newer communications programs such as ASCOM IV contain languages sophisticated enough to allow you to create a remote bulletin board service using its internal script files (as was done by *PC-Magazine* for its Interactive Reader Service). Nonetheless, Crosstalk's script files are easy to use and quite useful for the automation of routine data communications tasks.

Mirror: The Crosstalk Clone

Recently, a clone of Crosstalk called Mirror was introduced by SoftKlone Distributing. Functionally, Mirror is virtually identical to Crosstalk and will accept Crosstalk command and script files. In addition, Mirror includes a built-in text editor and a virtual mode which allows you, for example, to download a file from a remote computer while simultaneously calculating a spreadsheet. But the best feature of Mirror is its price: \$49 (\$29 from Soft Warehouse in Dallas) compared to Crosstalk's \$195 list price (\$95 from Soft Warehouse).

While Mirror is certainly a bargain, two words of caution are in order. First, the program is a little buggy. The examination copy we received at the Computing Center contained an error in the VT-100 emulation file which caused it to lock the system after entering the 02 code on the protocol converter. However, a call to SoftKlone's technical support staff resulted in a fix for the bug that afternoon. For the most part, however, Mirror performs every bit as well as Crosstalk. This leads us to the second problem; SoftKlone is being sued by Microstuff, the creators of Crosstalk, for copyright infringement. Softklone asserts that since Crosstalk advertises itself as an industry standard and since they copied none of Microstuff's source code, Mirror does not violate copyright laws. The issue at stake is whether copyright laws protect the "look and feel" of a product. Softklone has vowed to fight Microstuff in court and continues to ship the product in the meantime. At \$29, it's probably worth a gamble, especially if you're on a tight budget.

Conclusion

Both Crosstalk and Mirror are excellent tools for microcomputer communications. Crosstalk is obviously the more mature product, includes excellent documentation, and is available for non-IBM systems such as the TIPC. On the other hand, Mirror contains some features which make it slightly more flexible and its price is hard to beat. In the next issue of *Benchmarks*, we will examine several shareware communications packages available for both the IBM PC and the TIPC.

Modem Bargain: 1200 baud for \$84.11

By Dave Molta, Technical Support Communications Group (SY11@NTSMUSIC)

A & J Micro Drive, in cooperation with the Public Domain Software Exchange is offering a 300/1200 baud auto-dial, auto-answer, full duplex modem at a bargain-basement price of \$84.11 (plus \$7.50 for shipping and handling). The Avatek 1200 modem appears to be well made, comes with a typeset manual, and includes a 30-day money back guarantee. A & J will also include you a copy of QModem, a shareware communications software package for the IBM PC (Note: A review of QMODEM will appear in next month's *Benchmarks*) with all orders.

The Avatek 1200 uses a subset of the Hayes AT dialing commands and has been tested and found to be compatible with the following communications software:

IBM PC: Crosstalk XVI, Perfect Link, George, Quick Link, Mite, Carbon Copy, Mirror, PC Talk, PC Dial, QModem, Easylink, Blast, Modem 7, Unicom, Procom, and Kermit.

Atari: 850 Express, Modem 7, Homepack, and ST Talk.

Apple IIe w/Super Serial Card & Apple IIc: ASCII Express, Perfect Link, Person to Person, Apple Access II.

MacIntosh: Red Ryder, Freeterm, In Touch, PG Term, Mac Tap, Kermit, PFS Access.

Commodore 64: Q-Link, Viewterm, Comm-term III+, Eagleterm 7.0, VIP Terminal, Telemesssage, Qutamal Link, Punter, A Term, Easycom/Wasy go, Multiterm 4.5.

Amiga: Maxicom, Amiga Term, On-Line

CPM Micros: Micro Link, Modem 7, INP224, PC Talk, Crosstalk.

The Avatek 1200 can be ordered from the following address:

A & J Micro Drive
1050 E. Duane Ave., Suite I
Sunnyvale, CA 94086
408-732-9292

Undocumented CHKDSK Parameter for Winchester Disks

Reprinted from *The Times: The Newsletter of the Santa Clara Valley TIPC Users Group*, April 1986, Volume 2, Number 10 (Credited to Wayne Ross on TI Forum)

There is in DOS 2.nn an undocumented diagnostic gem that may be useful to hard disk users. From the root volume of your hard disk at the DOS prompt, E:, enter the command: **CHKDSK *.***

It should return a report on the state of "fragmentation" of the files on your hard disk, giving an indication of a need to do a total backup, reformatting and reloading of the disk in order to increase its efficiency.

MicroPro Users Group Memberships Available

By Claudia Lynch, *Benchmarks* Editor (AS04@NTSMUSIC)

Individual memberships are available to the MicroPro national user group for \$25 a year. An individual membership entitles you to receive the nine issue journal *OmniStar* and participate in the MicroPro Forum section of Compuserve. The MicroPro Users Group of America is dedicated to expanding and enhancing the use of MicroPro products such as WordStar and InfoStar. If you are interested in joining, I have a copy of the membership form in my office.

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*   O P E R A T I O N S   *
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Disk Backup Schedules**Backup Schedule for OS/MVS**

OS/MVS disk packs (academic and administrative) are backed up daily, Tuesday through Saturday, from 4-6:30 a.m., and Sunday from Midnight to 3 a.m. A backup of all the operating systems on the NAS CPU and their contents is done once every two weeks at some low activity period over a weekend.

MUSIC/SP Backup Hours

A message will be sent to all users signed on to MUSIC/SP approximately 10 minutes before backups are begun. It will be in the form **** MUSIC SHUT DOWN AT xxxx AM - SCHEDULED BACKUP ****. To find out the backup hours while signed on to MUSIC/SP, enter **HELP HOURS**. The following backup schedule is currently in effect:

Tuesday	3 a.m. (for about 3 hours)	Weekly backup
Wednesday - Saturday	4 a.m. (for about 2 hours)	Daily backup
Saturday	Midnight (for about 2 hours)	Daily backup

PHOENIX Backup Schedule

PHOENIX is backed up weekly on Sunday night. The backup begins at midnight and lasts for approximately 30 minutes.

VAX Backup Schedule

Incremental backups of both VAX systems are performed Monday through Thursday at 4 p.m. Users do not have to log-off, but any files that are open at the time of the backup will NOT be backed up.

Full backups of both systems are done every Friday beginning at 8 a.m. These generally will take all day to complete. Again, users do not have to log-off, but any files that are open will not be backed up.

A "Stand Alone" backup of the system disk is done the third Tuesday of every month, in the afternoon, just before preventive maintenance. This procedure makes a copy of the system disk that can be used to restore its contents if the disk is completely destroyed. The system will be shut down; watch the system log-on message for specific times and dates.

NOTE: No backups are taken on the weekends. Requests for restoration of files should be made via MAIL to the username OPERATOR. Your file can only be restored if it existed before the last backup was done.

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* * * * *
*           *
*   V A X E N   *
*           *
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Changes in VAXLand

By Lee Harper, VAX Operator (AO17@NTSMUSIC)

Here's one new policy, some new documentation, and four new utilities for your information and convenience:

1) Big Change in File Version Limits

After Monday, July 7, 1986, there will be a three-version limit placed on all files created on the VAX system at NTSU. There has not been a version limit before, which leads to nearly-unlimited numbers of previous file versions piling up as you re-edit. The new limit will only apply to files created after the change is made, not to new versions of files that existed before the change. Version limit refers to the number of files with the same file name and type that can exist in the directory at one time.

You will still be able to re-edit a file as many times as you like, but as you create new versions, all previous versions except the last two will be automatically deleted. This will save you time in having to type the PURGE command so often, but you may have to get used to the 3-version limit if you are used to relying on unlimited back-versions.

2) VAX/VMS Pocket Guide

A new *VAX/VMS Pocket Guide*, published by the NTSU Computing Center, is available at the University Store for \$1.25. It is suggested as a reference for all beginning to medium-high experienced users of the VAXcluster.

3) TALK utility

Try out the TALK utility. It is a utility that uses the SEND utility for easy communication between users. It is especially useful for slow and non-VT-100 terminals. Just type **TALK**, then type **/HELP** for information on use.

4) DM utility - for VT-100 or better terminals only

DM stands for directory manager and is a very nice program for directory browsing (like through DECUS or public directories, etc). It is a directory/file manager similar to (I've been told) PFM or PF EDIT on micros. Beware! It has a few bugs, particularly in the copying and renaming functions, but for looking at directories and files, it can't be beat. It can save mega-keystrokes (SET DEFAULT commands) and time. Just type **DM** to run it and then press the **HELP** (PF2) key. Type **HELP DM** from \$ prompt for more information.

5) WINDOW Utility - for VT-100 or better terminals only

WINDOW is a somewhat primitive multiple screen utility, very helpful in a few circumstances. It demonstrates some of the screen manipulation that VMS is capable of using SMG routines. Type **WINDOW** from the \$ prompt. A help screen is the first thing you see. Press 'CTRL' 'H' to see it again. Type **HELP WINDOW** for more information.

6) OTHER Utility

OTHER allows you to enter commands on the other node of the Cluster (VAXA if you're on VAXB, or vice-versa). For example, type **OTHER SYSTAT** to see a SYSTAT of the other node. Type **HELP OTHER** from the \$ prompt for more information.

Videotex Soon to be Available on the VAXCluster

By Ron Brashear, VAX System Manager

VAX Videotex (VTX) will be available on the VAXCluster sometime in the Fall semester, if not sooner. It will provide NTSU with the tools to distribute documents and other information electronically. VAX Videotex includes all the tools necessary for putting information into and retrieving information from an electronic information base (infobase).

It is best suited for information that:

- Would ordinarily require an expensive printing, reproduction and distribution process
- Must be updated and distributed frequently
- Must be made available to a widely-dispersed audience of readers

In a corporation, for example, VTX might include (but not be limited to) the distribution of the following types of information:

- Personnel policy manuals
- Sales literature indexes
- Sales updates
- Job openings
- Interplant transportation schedules
- Newsletters
- Price lists
- Customer order status
- News stores and weather bulletins

As you may imagine, the applications at NTSU would be equally, if not more extensive.

Four functions are performed by individuals participating in a VTX system:

Subscriber	End user (consumer) of the information
Information Provider(s)	Individual(s) who prepare and maintain the information
Operator	Individual responsible for operating the VTX system
Infobase designer	Individual (or team) who plans the logical structure of the infobase

Subscribers are the users of the information. They use VTX to view pages of information on a terminal screen. The subscriber accesses the information by making a choice from a list of options (also known as a menu) displayed on the terminal screen or by using the FIND function and typing a keyword or page number. To the subscriber, using VTX is much like using a library. The subscriber can read a page at a time, browse, use bookmarks, copy the page, and even get help. However, the subscriber cannot alter the information.

The information provider prepares and maintains the information that subscribers retrieve from VTX. An information provider's job is somewhat analogous to that of a newspaper reporter. A reporter has information to provide to an audience of readers. The reporter is not responsible for the page and section numbering scheme devised by the newspaper's editor nor for the information being in other sections by other reporters. The reporter is responsible for the accuracy of his or her information and for providing it within a predetermined amount of space.

The information provider has similar concerns: providing information in a format, and within a range of page numbers, determined, determined by the infobase designer, or perhaps a VTX administrator, who is responsible for the entire VTX infobase.

The infobase designer's job is somewhat analogous to that of the newspaper editor. The editor determines policy and structure for the paper, decides what kinds of stories will included, in what section and page, how much space will be allowed, and so on.

In the same way, the infobase designer plans the structure of the infobase, assigns section and ranges of page numbers for each information provider to maintain, and in general, implements policy regarding the nature of the information to be included in the infobase.

Finally, the VTX operator takes care of the VTX accounts of subscribers and information providers, makes sure the infobase files are open so subscribers can have access to them, and in general, assures that the VTX system is running correctly.

The information providers write to smaller update infobases which are periodically included (by the operator) in the main infobase which is accessed by the subscribers. The only operating system overheads are:

- Disk space consumed by the infobases
- Two system processes: one for connecting subscribers and information providers to their respective infobases, another (usually batched) for updating the main infobases from the smaller update infobases.

Editor's Note: If you think you might like to be an information provider, please contact me (AS04@NTSMUSIC).

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Information Systems News

By Coy Hoggard, Manager of Information Systems

Janet Harmon has recently been promoted to the position of Programmer Apprentice in the Fiscal Team. Janet has been employed as a Data Control Assistant in the Fiscal Team for the past three years. Janet is a native of Dallas. She received her BA in Psychology from NTSU in 1982, and is currently pursuing a MEd in Counselling. She is also taking Computer Science classes. Janet and her husband, John, currently live in Carrollton.

Scott Burrus has recently joined us as a Programmer in the Fiscal Team. Scott is officially an employee of TCOM, but his primary ("home") office will be at NTSU. Scott is originally from Dallas, but currently lives in Denton. He received his BS in Business Computer Information Systems from NTSU in December 1985, and worked as a student assistant in the BCIS department while in school.

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Real Programmers Don't Use Pascal - PART II

Contributed to *NutWorks*, Electronic Humor Magazine. Issue 3, Volume II, by Chris Condon (BITLIB@YALEVMX)

THE REAL PROGRAMMER AT WORK

Where does the typical Real Programmer work? What kind of programs are worthy of the efforts of so talented an individual? You can be sure that no Real Programmer would be caught dead writing accounts-receivable programs in COBOL, or sorting mailing lists for *People* magazine. A Real Programmer wants tasks of earth shaking importance (literally!).

- * Real Programmers work for Los Alamos National Laboratory, writing atomic bomb simulations to run on Cray I supercomputers.
- * Real Programmers work for the National Security Agency, decoding Russian transmissions.
- * It was largely due to the efforts of thousands of Real Programmers working for NASA that our boys got to the moon and back before the Russkies.
- * Real Programmers are at work for Boeing designing the operating systems for cruise missiles.

Some of the most awesome Real Programmers of all work at the Jet Propulsion Laboratory in California. Many of them know the entire operating system of the Pioneer and Voyager spacecraft by heart. With a combination of

large ground-based FORTRAN programs and small spacecraft-based assembly language programs, they are able to do incredible feats of navigation and improvisation — hitting ten-kilometer wide windows at Saturn after six years in space, repairing or bypassing damaged sensor platforms, radios, and batteries. Allegedly, one Real Programmer managed to tuck a pattern-matching program into a few hundred bytes of unused memory in a Voyager spacecraft that searched for, located, and photographed a new moon of Jupiter.

The current plan for the Galileo spacecraft is to use a gravity assist trajectory past Mars on the way to Jupiter. This trajectory passes within 80 ± 3 kilometers of the surface of Mars. Nobody is going to trust a Pascal program (or a Pascal programmer) for navigation to these tolerances.

As you can tell, many of the world's Real Programmers work for the U.S. Government — mainly the Defense Department. This is as it should be. Recently, however, a black cloud has formed on the Real Programmer horizon. It seems that some highly placed Quiche Eaters at the Defense Department decided that all Defense programs should be written in some grand unified language called "ADA" (©, DoD). For a while, it seemed that ADA was destined to become a language that went against all the precepts of Real Programming — a language with structure, a language with data types, strong typing, and semicolons. In short, a language designed to cripple the creativity of the typical Real Programmer. Fortunately, the language adopted by DoD has enough interesting features to make it approachable — its incredibly complex, and includes methods for messing with the operating system and rearranging memory, and Edsger Dijkstra doesn't like it. Dijkstra, I'm sure you know, was the author of "GoTos Considered Harmful" — a landmark work in programming methodology, applauded by Pascal programmers and Quiche Eaters alike.

The Real Programmer might compromise his principles and work on something slightly more trivial than the destruction of life as we know it, providing there's enough money in it. There are several Real Programmers building video games at Atari, for example. (But not playing them — a Real Programmer knows how to beat the machine every time: no challenge in that.) Everyone working at LucasFilm is a Real Programmer. (It would be crazy to turn down the money of fifty million Star Trek fans.) The proportion of Real Programmers in Computer Graphics is somewhat lower than the norm, mostly because nobody has found a use for computer graphics yet. On the other hand, all computer graphics is done in FORTRAN, so there are a fair number of people doing graphics in order to avoid having to write COBOL programs.

THE REAL PROGRAMMER AT PLAY

Generally, the Real Programmer plays the same way he works — with computers. He is constantly amazed that his employer actually pays him to do what he would be doing for fun anyway (although he is careful not to express this opinion out loud). Occasionally, the Real Programmer does step out of the office for a breath of fresh air and a beer or two. Some tips on recognizing Real Programmers away from the computer room:

- * At a party, the Real Programmers are the ones in the corner talking about operating system security and how to get around it.
- * At a football game, the Real Programmer is the one comparing the plays against his simulations printed on 11 by 14 fanfold paper.
- * At the beach, the Real Programmer is the one drawing flowcharts in the sand.
- * At a funeral, the Real Programmer is the one saying "Poor George. And he almost had the sort routine working before the coronary."
- * In a grocery store, the Real Programmer is the one who insists on running the cans past the laser checkout scanner himself, because he never could trust keypunch operators to get it right the first time.

THE REAL PROGRAMMER'S NATURAL HABITAT

What sort of environment does the Real Programmer function best in? This is an important question for the managers of Real Programmers. Considering the amount of money it costs to keep one on the staff, it's best to put him (or her) in an environment where he can get his work done.

The typical Real Programmer lives in front of a computer terminal. Surrounding this terminal are:

- * Listings of all programs the Real Programmer has ever worked on, piled in roughly chronological order on every flat surface in the office.
- * Some half-dozen or so partly filled cups of cold coffee. Occasionally, there will be cigarette butts floating in the coffee. In some cases, the cups will contain Orange Crush.
- * Unless he is very good, there will be copies of the OS JCL manual and the Principles of Operation open to some particularly interesting pages.
- * Taped to the wall is a line-printer Snoopy calendar for the year 1969.
- * Strewn about the floor are several wrappers for peanut butter filled cheese bars — the type that are made pre-stale at the bakery so they can't get any worse while waiting in the vending machine.
- * Hiding in the top left-hand drawer of the desk is a stash of double-stuff Oreos for special occasions.

- * Underneath the Oreos is a flowcharting template, left there by the previous occupant of the office. (Real Programmers write programs, not documentation. Leave that to the maintenance people.)

The Real Programmer is capable of working 30, 40, even 50 hours at a stretch, under intense pressure. In fact, he prefers it that way. Bad response time doesn't bother the Real Programmer — it gives him a chance to catch a little sleep between compiles. If there is not enough schedule pressure on the Real Programmer, he tends to make things more challenging by working on some small but interesting part of the problem for the first nine weeks, and then finishing the rest in the last week, two or three 50-hour marathons. This not only impresses the hell out of his manager, who was despairing of ever getting the project done on time, but creates a convenient excuse for not doing the documentation. In general:

- * No Real Programmer works 9 to 5 (unless it's the ones at night).
- * Real Programmers don't wear neckties.
- * Real Programmers don't wear high-heeled shoes.
- * Real Programmers arrive at work in time for lunch.
- * A Real Programmer might or might not know his wife's name. He does, however, know the entire ASCII (or EBCDIC) code table.
- * Real Programmers don't know how to cook. Grocery stores aren't open at three in the morning. Real Programmers survive on Twinkies and coffee.

THE FUTURE

What of the future? It is a matter of some concern to Real Programmers that the latest generation of computer programmers are not being brought up with the same outlook on life as their elders. Many of them have never seen a computer with a front panel. Hardly anyone graduating from school these days can do hex arithmetic without a calculator. College graduates these days are soft — protected from the realities of programming by source level debuggers, text editors that count parentheses, and "user friendly" operating systems. Worst of all, some of these alleged "computer scientists" manage to get degrees without ever learning FORTRAN! Are we destined to become an industry of Unix hackers and Pascal programmers?

From my experience, I can only report that the future is bright for Real Programmers everywhere. Neither OS-370 nor FORTRAN show any signs of dying out, despite all the efforts of PASCAL programmers the world over. Even more subtle tricks, like adding structured coding constructs to FORTRAN have failed. Oh sure, some computer vendors have come out with FORTRAN 77 compilers, but every one of them has a way of converting itself back into a FORTRAN 66 compiler at the drop of an option card — to compile DO loops like God meant them to be.

Even Unix might not be as bad on Real Programmers as it once was. The latest release of Unix has the potential of an operating system worthy of any Real Programmer — two different and subtly incompatible user interfaces, an arcane and complicated teletype driver, virtual memory. If you ignore the fact that it's "structured", even 'C' programming can be appreciated by the Real Programmer: after all, there's no type checking, variable names are seven (ten? eight?) characters long, and the added bonus of the Pointer data type is thrown in — like having the best parts of FORTRAN and assembly language in one place. (Not to mention some of the more creative uses for #define.)

No, the future isn't all that bad. Why, in the past few years the popular press has even commented on the bright new crop of computer nerds and hackers leaving places like Stanford and M.I.T. for the Real World. From all evidence, the spirit of Real Programming lives on in these young men and women. As long as there are ill-defined goals, bizarre bugs, and unrealistic schedules, there will be Real Programmers willing to jump in and and Solve The Problem, saving the documentation for later. Long live FORTRAN!

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